



2019 ENVIRONMENTAL EXCELLENCE AWARD RECIPIENTS AND NOMINEES

Environmental Hero Award

MDOT SHA: Winter Resource Reduction Initiatives & Strategies

In response to reduced budgets, severely damaged infrastructure, environmental impacts, and looming Total Maximum Daily Load (TMDL) restrictions, the Maryland Department of Transportation State Highway Administration (MDOT SHA) has reviewed its winter maintenance program for process improvements that could drive environmental improvements and reduce costs. MDOT SHA determined that a reduction in overall salt usage on MDOT SHA-maintained roadways could help the TBU achieve its fiscal, environmental, and level of service (LOS) goals.

To reduce salt usage, an internal training program geared toward raising awareness with MDOT SHA's plow operators



and maintenance managers was developed. The program outlined how the roles of each player in road maintenance contributes to the larger outcome of the program.

In implementing the program, MDOT SHA's Office of Maintenance (OOM) staff visited all 28 MDOT SHA facilities each fall to conduct the training with facility personnel. This training has been ongoing for five winter seasons and has had a significant impact on MDOT SHA's salt reduction efforts.

In 2017/18, the training focused on internal successes and sharing the best management practices with others, including MDE and local governments. At the end of the winter season MDOT SHA had an increase in overall salt usage by 9%, but this was due, in part, to improved data quality and extreme weather conditions requiring increased application (multiple weeks of temperatures below 20 degrees).

For the 2018/19 season, the training module focused heavily on the negative impacts of over-application on infrastructure and maintenance. The training showcased the rising costs, decreased life cycle, potential litigation from well claims, and safety risks associated with decaying infrastructure. By coupling this approach with the environmental and fiscal perspectives from years past, the training provided MDOT SHA staff with a comprehensive view of the importance of salt management.

Since 80% of MDOT SHA's winter snow-fighting equipment is operated by hired vendors, this training has also been integrated as a requirement into vendor contracts.

The program has recognized a cost savings of \$45 million with a salt reduction of 52% over the past five years, while maintaining the desired LOS, and allowing MDOT SHA to meet environmental stewardship goals.

Project Team Members	
Scott Simons	Division Chief of Highway Operations
Russ Yurek	Director of Maintenance (Retired)

Sustainability Award

MDOT MPA & MDOT MTA: Masonville Cove Capping & Soil Reuse

The restoration of Masonville Cove, located along the Middle Branch River in Southern Baltimore City, is a nationally recognized success story for the Maryland Department of Transportation Maryland Port Administration (MDOT MPA) and the citizens of Maryland. Over the past few years, MDOT MPA and MDOT MTA have been collaborating to maximize state resources to enhance

environmental benefits. Staff from the two Business Units recognized that surplus stockpiled soil from one MDOT project could be reused at another MDOT project instead of costly disposal at a landfill.



Soil from MTA's Monroe Street Stockpile

Bill Richardson, (MDOT MPA General Manager of Safety, Environment & Risk Management) and MDOT MTA



Unloading of material in Access Zone 3

Environmental Manager Robert Frazier, developed a partnership to reuse surplus soil whenever possible, starting with stockpiling material from MDOT MTA's Kirk Avenue project at the Masonville Dredged Material Containment Facility (DMCF) for future use in haul road construction and other fill

projects. The partnership also enabled Holly Miller, Chief of Project Development for MDOT MPA and her team from the Maryland Environmental Service (MES) to complete the much-anticipated capping of Access Zone 3 at Masonville Cove using soil stockpiled at MDOT MTA's Monroe Street facility.

In Fall of 2018, MDOT MPA capped the last remaining area of Masonville Cove using surplus soil provided by MDOT MTA as part of the long-standing program between the TBUs. The partnership resulted in the successful completion of one of the last remaining elements of the Masonville Cove restoration, as well as significant cost savings and efficient utilization of State resources.



Visitors on the Masonville Cove walking trail

Project Team Members

Holly Miller	Chief of Project Development—Harbor Development—MDOT MPA
Bill Richardson	Manager—Safety, Environment & Risk Management, MDOT MPA
Robert Frazier	Environmental Manager—MDOT MTA
Mindy Strevig	Senior Engineer—MES
Mike Miller	Engineering Section Chief—MES
Lisa Thomas	Formerly of MDOT MTA

Environmental Quality Award

MDOT MTA: Virtual NEPA Application Pilot Project

The goal of the National Environmental Policy Act (NEPA) process is to document the decision-making processes through an Environmental Assessment (EA) or Environmental Impact Statement (EIS). EAs and EISs define a project's purpose, capture potential environmental consequences and establish coordination with relevant public and regulatory agencies.

Developing efficient and effective tools for navigating the NEPA process is becoming increasingly important. Federal and State agencies have limited resources (staff and funding) and are required to review and process documents in an expedited manner. The Maryland Department of Transportation Maryland Transit Administration (MDOT MTA) developed the following three tools to effectively meet NEPA goals:

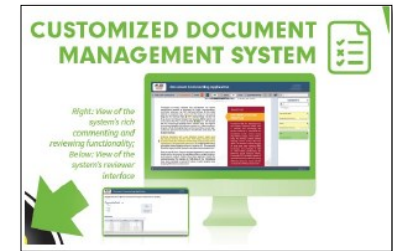
- Project Website*



- Interactive GIS-Based Map*



- Customized Document Management System*



These tools allow the public and partners to review and comment on proposed project impacts and environmental documents. MDOT MTA developed the tools, bundled together as the Virtual NEPA Application, and is currently testing the application with the high-profile Baltimore-Washington Superconducting Magnetic Levitation (SCMaglev) Project EIS.

Since launching the interactive mapping and project website in October 2017, MDOT MTA has received extensive input and feedback from partners and the public stating, "what an incredibly impactful tool", "this application allows for transparency", "details what is important to constituents", and "this application needs to be developed for every project!"

Project Team Members

Holly Arnold	Acting Deputy Administrator for Planning, Programming, and Engineering
Kate Sylvester	Acting Director of Planning and Programming
Lauren Molesworth	Environmental Planning, Manager
Kelly Lyles	Senior Advisor, KLT Group

NOMINEE: MDOT MTA 2018 Sustainability Plan & Sustainability Program Development

MDOT MTA adopted the first performance-driven Sustainability Program by any Maryland Transportation Business Unit on November 29, 2018. This Program will help the agency improve environmental, economic, and social equity outcomes by:

- Publishing a 2018 Sustainability Plan
- Setting agency-wide commitments, goals, and performance measures to guide and track progress; and
- Establishing an annual reporting process that publicly communicates progress and efforts to meet performance targets

Developing and implementing this Program requires ongoing interdepartmental collaboration to help integrate sustainability throughout MDOT MTA's business practices, such as helping collect data, calculate performance target recommendations, and provide expertise and quality control. Together, MDOT MTA staff seek to reimagine how the TBU identifies, prioritizes, plans, designs, and constructs projects that are good for the environment, communities, and business.

		GOAL	PERFORMANCE MEASURE
PEOPLE	AT MDOT MTA: Fostering Employee Wellness	Improve employee morale	Percent of employees with a positive workplace perception
		Improve employee health	Number of lost work days due to injury and sickness
	IN THE REGION: Promoting Livable Communities	Strengthen connections to opportunity	Population within a half mile of high-frequency service
		Enhance the transit experience	Modal share ratio
			Average trip duration
PLANET	AT MDOT MTA: Conserving Resources	Reduce energy use	Electricity and fuel consumed
		Reduce water use	Water consumed
	IN THE REGION: Supporting Environmental Stewardship	Improve water & air quality	Percent of renewable energy consumed
			Tons of greenhouse gases emitted
		Reduce & recycle waste	Area of impervious surface treated
PROSPERITY	AT MDOT MTA: Managing Finances Responsibly	Reduce & recycle waste	Percent of waste recycled and total waste generated
		Increase cost efficiency	Operating expenses
	IN THE REGION: Encouraging Job Creation	Automate revenue collection	Percent of fares purchased through electronic services
		Improve transit reliability	On-time performance
		Maintain assets in a state of good repair	Percent of vehicles that met or exceeded their useful life
			Percent of facilities & stations rated below a 3 on the TERM scale
			Percent of track with performance restrictions

Data will be reported by operating mode and adjusted for level of service, when appropriate

MTA Sustainability Plan Goals and Performance Measures

Project Team Members	
Holly Arnold	Deputy Administrator
Kate Sylvester	Acting Director, Office of Planning & Programming
Lauren Molesworth	Manager, Environmental Planning
Ryan McAlpine	Sustainability Program Coordinator—WSP

NOMINEE: MDOT MTA Energy Savings Project—Wayside Energy Storage

The State of Maryland set a goal that all state agencies reduce energy consumption. To reduce energy consumption and costs, MDOT MTA contracted with Constellation to perform an investment-grade audit of the Metro system and agency lighting, and provide energy efficiency recommendations.

First, over 8,000 lights were replaced with LED fixtures agency-wide. Second, a wayside energy storage system was installed at the West Cold Spring Traction Power Substation. The wayside storage system captures braking energy from a train entering the station, temporarily stores that energy and then releases it to the next accelerating train leaving the station.

This project will save MDOT MTA \$760,000 per year in electricity costs and will pay for itself in 7.5 years. During peak periods, this will also reduce the demand on BG&E's Cold Spring power substation, making the energy available to local consumers.

This helps increase the sustainability of the Metro from both a cost and energy use perspective.

Wayside Energy Storage Facts:

- The Wayside Energy Storage System (ESS) is designed to capture the regenerative braking energy from braking trains entering the station and return this energy to the system as trains accelerate away from the station.
- System allows for a reduction in energy consumption which reduces operating costs and in addition provides ancillary benefits such as energy resiliency and support to the electrical grid.



Wayside Energy Equipment



Wayside Energy Team

Project Team Members

Abdul Bari	Project Chief MEP Engineer
Virginia Dadds	Project Manager
Giles Gomme	Project Manager—Constellation
Joe Klapka	Construction Manager—Constellation
Zachariah Panneton	Project Manager
Carlos Puerto	Project Manager

NOMINEE: MDOT SHA Dover Bridge Replacement — MD 331 over the Choptank River

The MD 331 over Choptank River Bridge Replacement is a Maryland Department of Transportation State Highway Administration (MDOT SHA) project designed to replace a functionally obsolete historic swing span bridge in Talbot and Calvert counties. The historical significance of the exiting bridge forced MDOT SHA to make difficult decisions to minimize impacts to natural resources. Tidal wetland impacts were unavoidable, but with help of a dedicated project construction team these impacts were reduced, existing resources were improved, and new tidal wetlands were created.

Tidal wetland impacts were minimized using a temporary trestle system constructed using a top down approach. Early

construction designs required extensive dredging and a temporary earth embankment in the tidal marsh. To reduce wetland impacts, MDOT SHA used a temporary trestle to serve as a mobilization platform for the construction of the replacement bridge. This trestle was built above the marsh on piles using a “top down” construction method. This means that once the first section of trestle is built from the marsh up, the remainder of the trestle is constructed from the trestle itself, with minimal impact to the marsh below. During the construction of the trestle, the contractor, was able to further reduce impacts by using a large barge mounted crane to start the trestle. This eliminated the dredging and saved approximately 17,000 square feet of permanent impact to tidal wetlands.



Dover Bridge Construction

Project Team Members

Eric Freidly	Project Manager—SHA Office of Environmental Design
Trudi Gaito	Project Engineer—SHA, District 2, Office of Construction
Kyle Spendiff	Independent Environmental Monitor—WSP Engineering
Darryl English	Regional Environmental Coordinator—SHA Office of Environmental Design
Mark Elliott	Inspector—SHA, District 2, Office of Construction
Tim Leverage	Inspector—SHA, District 2, Office of Construction

NOMINEE: MDOT MAA A/B High Mast LED Lighting Project

In August 2018, MDOT MAA's BWI Marshall's Division of Operations and Maintenance initiated an LED lighting replacement project that promotes resource conservation and sustainability. The project involved the replacement of Apron Lights with LED lights on Piers A and B and the General Aviation Ramp of the BWI Marshall terminal.

The project resulted in energy savings, reduced maintenance cost, and exceptional lighting level improvements. The increase in visibility due to the improved lighting enhances safety and public experience.

Pier A and B:

A total of 24, 1000-watt metal halide light fixtures were replaced with Musco LED Lighting.

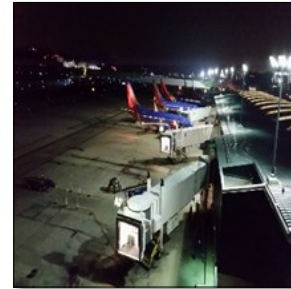
The replacement project will result in an average energy savings of 70,956 kilowatt hours (kwh)/year at MDOT MAA's BWI Marshall Airport facility.

General Aviation:

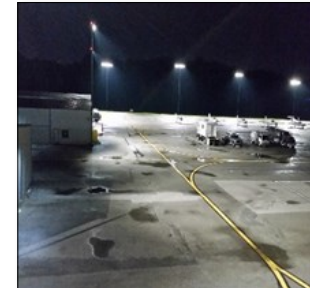
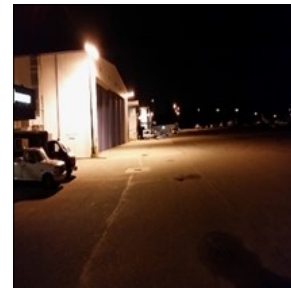
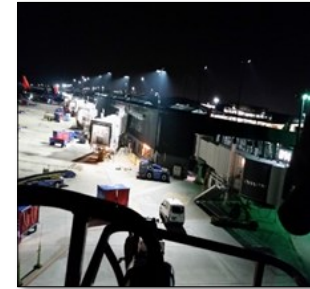
A total of 65, 400-watt metal halide light fixtures were replaced with the Halophane LED Lighting.

The replacement will result in an average energy savings of 60,784 kwh/year, and a total savings of \$13,170/year at MDOT MAA's BWI Marshall Airport facility.

Metal Halide (Before)



LED (After)



Project Team Members

Wayne Pennell	Chief, Division of BWI Operations & Maintenance
Brian Reidy	Director, Office of Grounds Maintenance
Kevin Pippin	Manager, Utilities
James Branch	Asst. Manager, Airfield Lighting & Power Dist.
Sattiah Ravirala	Transportation Engineer—Electrical, Utilities
Gerry Stover	Manager, Building Maintenance

NOMINEE: MDOT MPA Diesel Equipment Upgrade Program

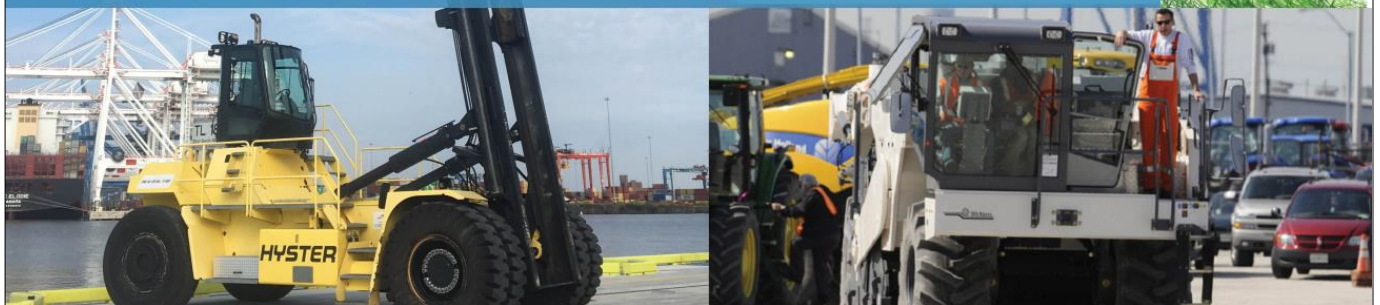
Maryland Department of Transportation Maryland Port Administration (MDOT MPA) is committed to doing its part to improve air quality in the Baltimore region. Reducing diesel emissions is one of the most important air quality challenges facing the nation. MDOT MPA's Diesel Equipment Upgrade Program is a highly successful contributor to that effort. The program helps private companies that own and operate heavy-duty dray trucks, cargo-handling equipment, railroad locomotives, and marine vessels at the Port of Baltimore to replace, repower or retrofit older diesel – powered equipment with newer models, achieving significant reductions in diesel emissions. Such projects protect human health by reducing harmful emissions, especially in areas with disproportionate impacts from diesel fleets.

Since 2007, the program has retrofitted, repowered, or replaced approximately 330 older diesel engines at the Port of Baltimore and includes cargo handling equipment, railroad locomotives, marine vessels, and drayage trucks. Lifetime emissions reductions for those pieces of equipment are estimated to be over 10,000 tons of pollutants.

Port of Baltimore Diesel Equipment Upgrade Program

The program provides funds to retrofit, repower, or replace older vehicles and equipment with more emission-efficient engines or technologies and recognizes partners for achieving goals that reduce air pollution and greenhouse gases associated with the transport of goods.

GreenPort
of Baltimore



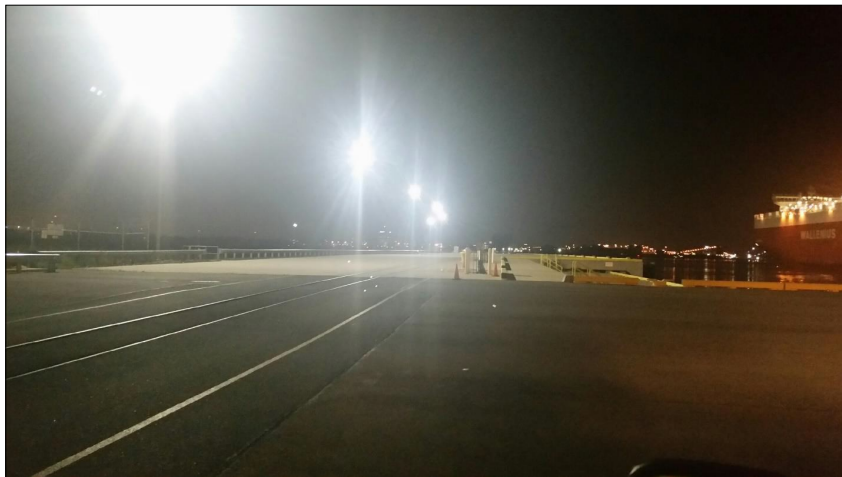
First Dray Truck Replacement Participant

Project Team Members

Bill Richardson	Manager—Safety, Environment & Risk Management
Chandra Chithaluru	Air Quality Policy & Program Manager
Shawn Kiernan	Environmental Manager
Aimee Warner	Section Chief, EMS & Restoration (MES)
Ted Kluga	Grants Administrator (MES)
Susan Stephenson	Senior Associate (EcoLogix Group)
Dan Spack	Principal (EcoLogix Group)

NOMINEE: MDOT MPA LED Lighting Upgrade Program

Part of the Maryland Department of Transportation Maryland Port Administration's (MDOT MPA) Environmental Strategy includes efforts to reduce energy consumption and reduce environmental impacts. MDOT MPA owns multiple marine terminals that support companies conducting business at the Port of Baltimore. The terminals provide space for the temporary storage of ocean-going international cargo such as automobiles, construction equipment, and general cargo containers.



Pier 3—Fairfield Marine Terminal with replaced LED lighting

Terminal operations are active work zones and require a significant amount of lighting to illuminate the parking lots and roadways for safety and security during evening hours. Until recently, the majority of the lighting at the terminals was provided by metal halide fixtures. Metal halides degrade quickly and must be replaced frequently.

To improve energy efficiency at the terminal, MDOT MPA began an LED Replacement Program in 2016 to reduce energy consumption and light replacement costs. Since 2016, as metal halide bulbs in the terminals have failed, MDOT MPA facilities personnel have replaced the metal-halide bulbs with highly efficient LED bulbs. Overall, the project has been successful in:

- Reducing MDOT MPA energy usage
- Increasing energy efficiency
- Decreasing energy costs
- Improving safety
- Increasing security
- Decreasing maintenance costs

Project Team Members	
Joe Nickoles	Deputy Director—Crane Facility and Fleet Maintenance
William Milani	Program Manger
Tony Allman	Facility Maintenance Supervisor
Roland Boone	Supervisor Electrical Maintenance
Don Stevens	High Voltage Crane Electrician
Sam Wilson	High Voltage Crane Electrician
Charles Maul	Skilled Trade Specialist

NOMINEE: MDOT MPA Solar Trash Cans

The Maryland Department of Transportation Maryland Port Administration (MDOT MPA) funded the purchase and installation of 216 solar-powered, compacting trash cans (Smart Cans) in Baltimore City as part of mitigation requirements related to the construction of the Masonville Dredged Material Containment Facility (DMCF) located along the shoreline in South Baltimore.



Figure 1—Smart Can

MDOT MPA's Office of Harbor Development is responsible for selecting and implementing a variety of mitigation projects. The Maryland Environmental Service (MES) assists MDOT MPA in the implementation of these projects. In 2018, an opportunity

became available to partner with the Baltimore City Department of Public Works (DPW) on a project to purchase and install solar-powered trash cans throughout Baltimore City. In July 2018, a Memorandum of Understanding was signed by MDOT MPA and Baltimore City DPW in which MDOT MPA would fund the purchase and installation of 216 of the Smart Cans. A specific focus was to include residential communities located near the Masonville and Fairfield Marine Terminals

and the Masonville DMCF. These communities include Masonville Cove, Cherry Hill, Brooklyn, Curtis Bay, and Lakeland.

The project was managed from MDOT MPA's office of Harbor Development by Holly Miller, Sergio Adantor, and Shawn Kiernan, with outreach support provided by Katrina Jones and Charles Schelle. Technical assistance was provided by MES. MDOT MPA's decision to partner with Baltimore City DPW on the solar trash cans was informed in part by a previous successful litter reduction campaign implemented through MDOT MPA's office of Safety, Environment and Risk Management (SERM) as part of the Port's "Clean Port initiative", which focused on litter prevention. As part of that pilot program, three BigBelly, solar-powered trash receptacles were purchased and placed at high foot traffic locations at MDOT MPA's marine terminals.

Project Team Members

Holly Miller	Chief of Project Development	Stephanie Peters	Environmental Specialist—MES
Sergio Adantor	Transportation Engineer	Danielle Wilson	Environmental Specialist—MES
Katrina Jones	Outreach Coordinator	Bryce Selby	Environmental Specialist—MES
Bill Richardson	General Manager	Aaron Little	Baltimore City DPW
Shawn Kiernan	Environmental Manager	Jeffrey Raymond	Baltimore City Communications
Charles Schelle	Digital News Media Manager		